# PL-1 Strategy for Screening Novel Microorganisms

**Prof. Yung Chill Hah**
**The Department of Microbiology,**
**Seoul National University**

Many of world's most successful and commercially-valuable medicines have been derived, directly or indirectly, from natural product sources. Scientists seeks to continue this trend by drawing upon the unique and extensive biota to discover new molecules with potential for development as new medicines. In attempting to generate as much chemical diversity as possible, there is a strategic emphasis on maximizing diversity at five key stages of the process.

## Sampling for microbial isolation :

Microbiologists should access a diverse range of environmental samples of both terrestrial and aquatic origin from distinct geographic regions. Unique microhabitats such as the tissues of isolation of microbes which may be host-specific and which may therefore present novel and/or endemic species.

## Sample pretreatments and selective isolation media:

A wide range of pretreatments and newly developed media are applied to select for or against specific groups of organisms and aid the isolation of taxonomically-diverse strains, including rare and/or novel organisms. Physical, chemical, and biological approaches are applied in various combinations to facilitate isolation of diverse microbes from source materials.

## Screening for bioactive compounds:

This will be dealt with at the session of screening for novel pharmaceuticals.

## Identification of isolated microorganism:

The microbial isolates should be identified by using polyphasic method taxonomically.

## Fermentation conditions:

All microbial isolates are fermented under a range of different conditions in different media to ensure through exploration of the biosynthetic potential of each isolate. The fermentation systems in use include shaken liquids, static liquids and a proprietary, high-capacity solid substrate fermentation system.

Further details of the above approaches to microbial diversity, with a illustrative example will be presented.